

Spatially Selective UHF Near Field Microstrip Coupler Device and RFID Systems Using Device

Abstract

A system having a UHF RFID transceiver is adapted to communicate exclusively with a single electro-magnetically coupled transponder located in a predetermined confined transponder operating region. The system includes a near field coupling device comprising a plurality of lines connected in parallel with an unmatched load. The near field coupling device may be formed, for example on a printed circuit board with a plurality of electrically interconnected traces and a ground plane. The system establishes, at predetermined transceiver power levels, a mutual electro-magnetic coupling which is selective exclusively for a single transponder located in a defined transponder operating region. Also included are methods for selective communication with the transponder in an apparatus such as a printer-encoder.